November 14, 2002

Mr. J. V. Parrish
Chief Executive Officer
Energy Northwest
P.O. Box 968 (Mail Drop 1023)
Richland, WA 99352-0968

SUBJECT: COLUMBIA GENERATING STATION - ISSUANCE OF AMENDMENT RE: AMENDMENT REQUEST TO REVISE THE MINIMUM EMERGENCY DIESEL GENERATOR OUTPUT VOLTAGE (TAC NO. MB5672)

Dear Mr. Parrish:

The Commission has issued the enclosed Amendment No. 181 to Facility Operating License No. NPF-21 for the Columbia Generating Station (CGS). The amendment consists of changes to the Technical Specifications (TS) in response to your application dated July 16, 2002, as supplemented by letter dated September 4, 2002.

The amendment revises Surveillance Requirements (SRs) 3.8.1.2.b, 3.8.1.7.b, 3.8.1.11.c.3, 3.8.1.12.a, 3.8.1.15.b, 3.8.1.19.c.3 and 3.8.1.20 to change the specified minimum emergency diesel generator steady-state output voltage from 3740 volts to 3910 volts.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Brian Benney, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosures: 1. Amendment No. 181 to NPF-21
2. Safety Evaluation

cc w/encls: See next page

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ACCESSION NO.: ML022800463 **NRR-058** ***SE dated September 26, 2002**

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Columbia Generating Station

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ENERGY NORTHWEST

DOCKET NO. 50-397

COLUMBIA GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 181
License No. NPF-21

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Energy Northwest (licensee) dated July 16, 2002, as supplemented by letter dated September 4, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-21 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 181 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Stephen Dembek, Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: November 14, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 181

FACILITY OPERATING LICENSE NO. NPF-21

DOCKET NO. 50-397

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE	INSERT
3.8.1-6	3.8.1-6
3.8.1-8	3.8.1-8
3.8.1-10	3.8.1-10
3.8.1-11	3.8.1-11
3.8.1-14	3.8.1-14
3.8.1-16	3.8.1-16
3.8.1-17	3.8.1-17

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 181TO FACILITY OPERATING LICENSE NO. NPF-21

ENERGY NORTHWEST

COLUMBIA GENERATING STATION

DOCKET NO. 50-397

1.0 INTRODUCTION

By letter dated July 16, 2002, as supplemented by letter dated September 4, 2002, Energy Northwest (the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-21) for the Columbia Generating Station (CGS). The proposed changes would revise Surveillance Requirements (SRs) 3.8.1.2.b, 3.8.1.7.b, 3.8.1.11.c.3, 3.8.1.12.a, 3.8.1.15.b, 3.8.1.19.c.3 and 3.8.1.20 to change the specified minimum emergency diesel generator (EDG) steady-state output voltage from 3740 volts to 3910 volts.

The September 4, 2002, supplemental letter provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on August 20, 2002 (67 FR 53985).

2.0 REGULATORY EVALUATION

General Design Criterion (GDC)-17, "Electric Power System," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 requires, in part, that a nuclear power plant have an onsite and offsite electric power system to permit the functioning of structures, systems and components important to safety. The onsite system is required to have sufficient independence, redundancy and testability to perform its safety function, assuming a single failure, and the offsite system is required to be supplied by two independent circuits. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as the result of loss of power from the unit, the offsite transmission network, or the onsite power supplies. GDC-18, "Inspection and Testing of Electric Power System," requires, in part, that electric power systems important to safety be designed to permit appropriate periodic inspection and testing.

At CGS, the EDGs provide a source of emergency power when offsite power is either unavailable or is insufficiently stable to allow safe plant operation. The Division 1 and 2 standby alternating current (AC) power sources consist of two independent 4.16 kV Class 1E diesel generators, each connected to one of the two 4.16 kV Class 1E switchgear buses via two main circuit breakers. One breaker is located near the diesel generator unit; the other is located in the 4.16 kV Class 1E switchgear.

The Division 3 standby ac power source, which is the source for the high pressure core spray system, consists of one independent 4.16 kV Class 1E diesel generator with its own 4.16 kV Class 1E switchgear bus.

During the course of an NRC inspection in September of 2001 at CGS, a finding was identified that was one of very low safety significance and was characterized as a non-cited violation. The details of the finding are documented in NRC Inspection Report 50-397/01-06. In summary, it was found that the EDG output voltage range specified in SR 3.8.1.19.c.3 is from 3740V to 4400V and the degraded emergency bus voltage instrumentation allowable value range specified in Loss Of Power (LOP) Instrumentation Table 3.3.8.1-1.1.e is from 3685V to 3755V. This presents a condition wherein the TS allow a steady-state minimum EDG output voltage that is 15V lower than the maximum setpoint at which degraded voltage instruments may be actuated to perform their safety function.

To reconcile the overlap between the two allowable ranges and provide consistent allowable output voltage ranges for all EDGs, the licensee proposes to increase the minimum steady-state EDG output voltage limit to 3910V for the Division 1, 2 and 3 EDGs.

3.0 TECHNICAL EVALUATION

The three EDGs at CGS specify the minimum steady-state output voltage for a loaded EDG to be 3740 V. This is based on American National Standard Institute (ANSI) Standard C84.1-1970 for normal utilization voltage for a 4kV medium voltage distribution system. However, if the degraded voltage instruments are set near the upper end of their acceptable range and the output voltage of the Division 1 and Division 2 diesels (EDG 1, EDG 2) is at the lower end of the acceptable range, the degraded voltage instrumentation could actuate and trip all loads off the Division 1 and Division 2 critical buses during a loss of offsite power and/or a loss of coolant accident.

Critical bus loads include residual heat removal pumps, low pressure core spray pumps, service water pumps, and other equipment necessary to mitigate accident conditions.

The licensee proposes to use 3910V as a minimum steady-state EDG output voltage for all three EDGs. This value is the minimum voltage necessary to meet the breaker closure (ready to load) interlock for EDG 1 and EDG 2, and it is the minimum EDG output voltage specified by the TS for unloaded EDGs. This proposed new steady-state voltage will be used in TS SRs 3.8.1.2.b, 3.8.1.7.b, 3.8.1.11.c.3, 3.8.1.12.a, 3.8.1.15.b, 3.8.1.19.c.3 and 3.8.1.20 that currently specify a minimum steady-state output voltage of 3740V. This will reconcile the overlap between the two allowable ranges and is acceptable.

EDG 3 is different in that it uses an 850 RPM speed interlock for its breaker closure permissive. However, it is reasonable to select 3910 V as an appropriate minimum steady-state voltage for EDG 3 since it is a dedicated power source for only one engineered safety feature load, and its bus voltage does not fluctuate as loads are sequenced on. Additionally, changing the minimum steady-state voltage specification for EDG 3 to 3910V (or 94 percent of a nominal 4160V) provides more margin to the analytical limit for the degraded voltage relay dropout and ensures that the EDG supplies a more conservative voltage to start the high pressure core spray pump

motor (75 percent voltage is the minimum specified voltage needed at the motor terminals to start and accelerate the pump motor). This is acceptable.

The staff finds that the proposed change is conservative and does not involve a design change or physical change to the equipment or the actual performance parameters of the diesel generators. There will be no change in the method of operation or in the way operability is demonstrated. The designs of CGS's EDGs feature precise regulation of output voltage using a Class 1E static exciter voltage regulator that controls generator output voltage to within +/-1% of its setpoint and the setpoint for the loss of power instrumentation is also controlled to within +/-1%. The proposed amendment does not involve a change to the margin between these two parameters and therefore is acceptable.

The AC systems will continue to perform their safety functions in accordance with GDC-17. The changes will maintain the necessary level of systems reliability as it reconciles the overlap between the two allowable ranges of the degraded voltage instrumentation and the minimum steady-state EDGs output voltage. Therefore, the proposed changes to the technical specifications are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Washington State Official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (67 FR 53985). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. Saba

Date: November 14, 2002